

Remarks

Claims 23, 36, 37, 40, 47 and 49 are amended herein and claim 71 is added. Claims 1-5, 7-23, 25-31, 36-64, 66-67, and 69-71 are pending.

Applicant thanks the Examiner for the Office Communication mailed June 13, 2007. When Applicant elected the species in the previously filed response mailed April 4, 2007, Applicant believed that the Examiner was requesting that one of the six items described by the Examiner as "the following patentably distinct species" for which "Applicant is required . . . to elect a single disclosed species for prosecution on the merits" be elected. Applicant thanks the Examiner for clarify this and requesting an additional response in the Office Communication mailed June 13, 2007.

The present document includes all the claim amendments and material concerning the Response to the Restriction Requirement mailed April 4, 2007 plus an election of species as clarified by Examiner in the Office Communication mailed June 13, 2007. Please refer to pages 13-14 herein for the species election.

Applicant would like to point out that a new attorney docket number has been assigned to this application. The new attorney docket number for this application is 2416.007US1 (formerly 423.019US1).

Claim 23 is amended to recite a porous cross-linked metal oxide or silicon oxide based aerogel material produced by: (a) first, forming a metal oxide or silicon oxide based sol-gel material to provide a preformed metal oxide or silicon oxide based sol-gel material; then, (b) contacting the preformed metal oxide or silicon oxide based sol-gel material with a cross-linking agent, the cross-linking agent comprising an organic compound, to provide a cross-linked metal oxide or silicon oxide based sol-gel material comprising organic cross-links; and then, (c) drying the cross-linked metal oxide or silicon oxide based sol-gel material to form the porous cross-linked metal oxide or silicon oxide based aerogel material. Support for this amendment is found, for example, on page 2, lines 16-20, in general; pages 6-9, for formation of the sol-gel material; pages 10-12, for cross-linking the sol-gel material with a cross-linking agent comprising an organic compound, such as a diisocyanate; and for drying, page 10, General Procedure; and for

all, Examples I, II, III and IV.

Claim 36 is amended to recite the sol-gel material of claim 25, wherein the sol-gel material is silica based. Support for this amendment is found in claim 25, wherein it is recited that the sol-gel material is metal oxide or silicon oxide based. Claim 36 further limits claim 25 by reciting that the material is silicon oxide based, and it is well known in the art that silica comprises silicon oxide (SiO_2). Further support is found on page 6, lines 1-24, and page 8, lines 5-6, of the application as originally filed.

Claim 37 is amended to recite the cross-linked metal oxide or silicon oxide based sol-gel material of claim 25, wherein the cross-linking agent is a diisocyanate, a triisocyanate, a polyisocyanate, or a mixture thereof. Support for this amendment is found, for example, in claim 38, wherein diisocyanates, triisocyanates, and polyisocyanates are disclosed. Further support is found for diisocyanates on pages 10 and 11, in Examples I and II; for triisocyanates and polyisocyanates see Table III (page 21), and see originally filed claims 18 and 19.

Claim 40 is amended to recite a cross-linked metal oxide or silicon oxide based aerogel material formed by drying of the cross-linked metal oxide or silicon oxide based sol-gel material of claim 25, the drying being carried out using solvent exchange or supercritical drying, or both, such that the aerogel material does not collapse when in contact with a liquid that comprises water, an alcohol, an ether, a hydrocarbon, an ester, a ketone, a carboxylic acid, a phosphoric acid, or a liquefied gas. Support for this amendment is found on page 14, line 1 through page 15, line 2; and page 17, lines 1-4.

Claims 47 and 49 are amended to make them dependent upon claim 25 rather than on claim 23.

New claim 71 recites the sol-gel material of claim 25 comprising an attached group wherein the cross-linking agent comprising an organic compound includes the attached group. Support is found, for example, in original claim 43, and also on page 11, line 24 to page 12, line 3.

Election/Restriction

Applicants have reviewed the Restriction Requirement mailed March 5, 2007 and provisionally elect, with traverse, the claims of Group II (claims 23, 25-31, 36-42, 47-49, 69, and

70, and new claim 71). Reconsideration and withdrawal of the Restriction Requirement, in view of the remarks presented herein, is respectfully requested.

The restriction requirement is traversed on the basis that Restriction Requirements are optional in all cases. M.P.E.P. § 803. If the search and examination of an entire application can be made without serious burden, the Examiner must examine it on the merits, even though it arguably may include claims to distinct or independent inventions. M.P.E.P. § 803. Moreover, it is submitted that Applicant should not be required to incur the additional costs associated with the filing of multiple divisional applications in order to obtain protection for the claimed subject matter.

Additionally, Applicant traverses the restriction requirement on the grounds that it would not place an undue burden on the Examiner to search the subject matter of all the claims, or at least the claims of Groups I, II, III and V, together. Applicant submits that a search directed to one Group would likely yield results applicable to other Groups.

Furthermore, Applicant respectfully notes that the claims have already been searched and examined as can be demonstrated by the previous Office Actions issued in this application. Thus, Applicant respectfully submits that it cannot now be a burden on the Examiner after the claims have already been searched and examined together.

Therefore, Applicant requests reconsideration and withdrawal of the Restriction Requirement. Thus, the Restriction Requirement has been properly traversed. Accordingly, reconsideration and withdrawal of the Restriction Requirement is respectfully requested.

The Examiner required an election of species for search purposes. Applicants traverse the requirement for election of a species on the grounds that a search of all the alleged species could be made by the Examiner without an undue burden, and that the results of any such search would likely bear on all of the alleged species. Thus, Applicant respectfully requests reconsideration and withdrawal of the species election requirement.

Applicants nevertheless make the following species elections with traverse:

(1) The oxides: Applicant elects silica (silicon oxide). Applicant believes that all pending claims read on this species.

(2) The crosslinking reagent: Applicant elects a isocyanate, which includes a

diisocyanate, a triisocyanate, and a polyisocyanate. Applicant believes that all pending claims read on this species.

(3) The attached group: Applicant elects a biomolecule. Applicant believes that all pending claims read on this species.

(4) The solvents: Applicant elects an alcohol. Applicant believes that claims 1-5, 7-10, 13-23, 25-31, 36-64, 65-67 and 69-71 read on this species.

(5) The drying operations: Applicant elects drying supercritically. Applicant believes that claims 1-5, 7-23, 25-49, 66-67 and 69-71 read on this species.

(6) The new solvent: Applicant elects a C_5 - C_{10} alkane. Applicant believes that all pending claims read on this species.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6905 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 2 day of July 2007.

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